

## CONSTRUCTION OF ICE-HOUSES.

Sir,—Will you allow me to ask a question through the medium of your very useful paper, in which questions and answers from time to time from various subscribers form no inconsiderable part? In the month of January last I built an ice-house at the back of my cellar, which is under ground, built and arched over with 14-inch brickwork, the door opening into an area. On excavating for the ice-house to about the depth of 19 feet, I found a spring of water, which I thought would be available for the house. I carried the excavation down to the depth of 30 feet, stoned the well with 9-inch brickwork, and formed a floor 12 feet up from the bottom (the height of the water being 9 feet); the floor was of 14-inch plank, perforated with holes to lead any water from the ice into the well. Before filling it with (thick) ice I put on a layer of straw over the floor. The house was built and domed over with 9-inch brickwork, and well combed inside and outside, with 3 feet of earth on the top. Six feet under the dome, a little above the cellar floor, I inserted a cover of 14-inch plank, with man-hole, and had an inner and outer door leading into it from the cellar, also, an outer cellar-door; but notwithstanding all these precautions the ice has disappeared. I should feel much indebted to any of your readers by their informing me in what way I have erred, and what remedy I can adopt to prevent a recurrence.—I am, Sir, &c. A SUBSCRIBER.

Paddington, July 3, 1845.

No ice could possibly remain in such a receptacle, as the water in the well would speedily reduce the ice to its own temperature. Our correspondent must get rid of the water-well,—introduce an additional wall all round the inside of the house and over the floor (keeping a space between), and provide means for carrying off such water as may be produced by the melting of the ice, without the risk of introducing air. There should be at least three doors, and the space between two of them should be filled with straw. The greatest care is requisite in the construction of ice-houses to prevent the access of heat.

## IRON AND THE IRON TRADE.

The usual quarterly meetings of the iron masters were held last week—at Walsall on Tuesday; Wolverhampton on Wednesday; Birmingham on Thursday; Stourbridge on Friday, and Dudley on Saturday.

During the last quarter some houses had reduced the price of bar iron from 10*l.* to 8*l.* per ton, and it was arranged at the Birmingham meeting that a general reduction to the last quoted price should be made. It was, however, reserved, in accordance with the usual practice, that the final confirmation of the reduction should emanate from the Dudley meeting, and at the close of the business, last Saturday, the prices were declared as follows: bar-iron, 8*l.* per ton; pigs from 3*l.* 10*s.* to 4*l.* per ton. How long they will remain at the reduction is uncertain, but there is no great danger of a sudden advance. The fluctuations which have lately taken place have been of considerable embarrassment to the trade, and rendered it very difficult for the manufacturer to know how to purchase. The general impression is that 8*l.* is a remunerative price, and the masters being well aware that the manufacturers cannot compete with the foreign market if they have to pay a higher price for the raw material, will see the impolicy of again advancing the prices unless under some very extraordinary circumstances.

While on the subject of iron, we would mention that at the late meeting of the British Association, at Cambridge, Dr. Lyon Playfair read a report, prepared by Professor Bunsen, and himself, on the chemical changes occurring in iron furnaces. During many years the attention of scientific men on the Continent had been directed to the employment as fuel of the combustible gases that escape from the mouths of furnaces. Dr. Playfair and Professor Bunsen have carefully examined the gases taken from different heights of the furnace, and gave tabulated results of their analyses, the results of which were that for a depth of 24 feet down the body of iron hot-blast furnaces worked with coal there is no available heat for the melting of the metal, the

whole of the heat for that extent of the furnace being employed in distilling the coal. The important fact which they established by their experiments is, that in common hot-blast furnaces, as at present employed, ninety-one per cent. of the heating power of the fuel is lost; that is, only nine parts out of one hundred are effective, the remaining portion being carried off in gases. It was proposed, therefore, to collect the gas as it issues from the furnace mouth, and to employ it usefully in various parts of the works, though they did not recommend the re-introduction of such gas into the furnace for smelting the metal. Dr. Playfair said that these researches had led them to the consideration of a new system of manufacturing iron, which would produce a complete revolution in the present mode, but they had not had sufficient time to digest the plan to authorise them to recommend it to the association; it would form the subject of their labours for the next year.

## NOTES FROM THE PROVINCES.

It is in contemplation, at Yarmouth, to enlarge and restore St. Nicholas' Church, and to convert the remains of a priory on the south side of the churchyard into a national school. The estimated expense is between 4,000*l.* and 5,000*l.* St. Nicholas' Church, in an ordinary observer, appears little better than a dilapidated disproportioned and unsightly erection, but to the eye of the antiquary it presents beauties and attractions of no ordinary character. It is one of the oldest parochial edifices of the kind in England; a great peculiarity, and one in which it perhaps stands alone amongst the churches of Christendom, is in having its nave considerably smaller than the aisles, both in regard to length and breadth. The remains of the priory are now being used as a stable. They still contain two very beautiful windows and other specimens of ancient ecclesiastical architecture. Many of the corbel heads have been removed only within a very few years. Mr. Hakewill is the architect.—The principal difficulties connected with the Woodhouse tunnel, on the Sheffield, Ashton-under-Lyne, and Manchester Railway have been overcome. From the mouth of the tunnel to a little beyond the first shaft there is upwards of 1,200 yards completed, being arched, having side drains and the rails laid. Between the first and second shafts the arching for a considerable distance is finished. The whole of the excavation is completed with the exception of about 300 yards. The depth of the first shaft is 183 yards, and of the second 193 yards. The highest point of ground under which the tunnel passes is situated between the third and fourth shafts, and is 536 yards above the level of the sea at low water.—The York and Scarborough Railway was opened on the 7th instant. The directors and their friends started from York, after partaking of a splendid breakfast in the Town Hall, in 36 carriages, each containing 18 persons. Near to Castle Howard the train stopped to take up Lord Morpeth, who had provided refreshments for the occupants of the train. After remaining a short time at Scarborough the company returned to York, and dined at the Town Hall.—During the past winter the beautiful grounds adjoining Alton Towers have been greatly improved under the direction of Mr. W. A. Nesfield. The upper terraces and slopes have been decorated with groups of marble statues and colossal marble vases interspersed with rose trees and beds of exotic flowers. The growth of the trees, particularly the evergreens, were beginning to hide the architecture. Many of these have been removed, and the beautiful stone work of the scalloped walls and vases are brought to light again, and stand out in bold relief against the rich background of forest trees. The Earl and Countess of Shrewsbury permit the house, with its galleries of paintings and works of art, as well as the gardens, to be shown to respectable persons, who can obtain cards for admission on applying at the Shrewsbury Arms Inn.—The Town Council of Beverley are actively engaged in improving the sanitary condition of their town. The sewerage has been disgracefully neglected for many years. A capacious reservoir, 30 yards long and 4 feet in depth, has been found to be full of filth, it not having been cleared during the last 30 years.

## LIST OF NEW PATENTS RELATING TO ARCHITECTURE, ENGINEERING, &amp;c., GRANTED FOR ENGLAND.

Furnished by Mr. A. Prince, of the Office for Patents of Inventions, Lincoln's-inn Fields, London.

[SIX MONTHS FOR ENROLMENT.]

Cornelius Whitehouse, of Wolverhampton, gun-barrel manufacturer, for improvements in machinery for welding and hammering, and in the manufacture of gun-barrels and other tubes. June 3.

William Costen Aitken, of Birmingham, clerk of works, for a certain improvement, or certain improvements in ornamenting cornices, ends for cornice poles and other rods, curtain bands and certain other articles. June 3.

John Lionel Hood, of Saint John's Wood, gentleman, for improvements in the application of motive power, for locomotive and other purposes. (Being a communication.) June 3.

William Brent Brent, of Gower-street, Bedford-square, barrister-at-law, for certain improvements in machinery for cutting or excavating, and removing earth. June 3.

Thomas Lawes, of Old Kent-road, Surrey, gentleman, for improvements in propelling carriages on rails and other roads, and boats or vessels on canals and rivers, which improvements are also applicable to machinery in general. June 3.

William Palmer, of Sutton-street, Clerkenwell, manufacturer, for improvements in working atmospheric railways, and in lubricating railway and other machinery. June 5.

Henry Kerr, of Abingdon, Berks, butcher, for certain improvements in the construction of temporary roofs or coverings. June 5.

James Harday, of Birmingham, gentleman, for improvements in the manufacture of metallic tubes, or pipes, by machinery. June 5.

William Willocks Sleight, of Stamford Brook House, Chiswick, doctor of medicine and surgeon, for a hydro-mechanic apparatus for producing motive power. (Colonies only.) June 7.

Samuel Harvey, of Halesworth, in the county of Suffolk, cabinet-maker, for certain improvements in sawing machinery. June 7.

David Henderson, of London Works, Renshaw, civil engineer, for certain improvements in cranes. June 10.

Thomas Smith, of Wood-street, Cheapside, gentleman, for improvements in aspending carriages, and in the construction of wheels for carriages. June 10.

Frederick Rosenborg, of Kingston-upon-Hull, gentleman, for improvements in the arrangement or construction of machinery, or apparatus for propelling or impelling vessels, and in steering or manoeuvring the same. June 12.

Thomas Clark, of Hackney, engineer, for an improvement on the atmospheric system of propulsion, which is also applicable to other motive purposes. June 23.

Robert Griffiths, of Havre, George Hinton Bolville, of Millwall, and George Hennett, of Bristol, engineers, for improvements in the construction of parts of apparatus used for propelling carriages and vessels by atmospheric pressure. June 23.

Joseph Zambaux, chemist, of Paris, for improvements in atmospheric railways. June 25.

William Sykes Ward, of Leeds, gentleman, for improvements in exhausting air from tubes or vessels for the purpose of working atmospheric railways and for other purposes. June 25.

Jubam Bagge, of Great Percy-street, Chancery-square, engineer, for improvements in obtaining motive power by air. June 26.

Charles Goodwin, of Bow-lane, ship-surveyor, for certain improvements in masts and spars. June 30.

ACCOUNT OF THE PARISH OF STOWING, KENT.—The Rev. F. Wrench has published a brochure under this head giving an account of the antiquities lately discovered there, which are considered to be Anglo-Saxon, and of the sixth or seventh century. Mr. C. Roach Smith, in a note on these relics, suggests that excavations for railroads about to be made in Kent will probably bring to light many antiquities of different epochs, to preserve which every man of good taste and feeling should exert himself.

• J. R. Smith, Old Compton-street.